



PATENT  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
Maor, et al. )  
Serial No.: 09/582,522 )  
Filing Date: April 10, 2000 )  
For: **A GEL COMPOSITION FOR** )  
**SKIN CARE AND PROTECTION)** )  
**AND A METHOD OF** )  
**PREPARATION THEREOF** )

Group Art Unit:  
1617  
Examiner:  
Wells, L.

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**DECLARATION UNDER 37 C.F.R. § 1.132 OF SHLOMO MAGDASSI**

I, Shlomo Magdassi of 36 Hamered Street, Jerusalem, Israel, an Israeli citizen declare hereinafter in writing as follows:

1. I am Associate Professor at the Hebrew University in Jerusalem.
2. I enclose as Annex "A" my Curriculum Vitae.
3. I am one of the inventors of the above captioned Application No. 09/582,522.
4. The following experiments, which results are briefly summarized, were conducted

under my supervision in the framework of the Master's thesis of one of my students.

**Solubility of Different Solubilizers at different concentrations in Dead Sea water.**

5. Varying concentrations (either 1.0 and 3%; or 1% and 5% w/w) of four different solubilizers were mixed in varying concentrations of dead Sea salt solutions

The solubilizers were:

Anionic solubilizer -SDS

Cationic solubilizer -Centri Chloride

Non-ionic solubilizer -Tween 20 and Tween 80.

The mixture was denoted as “transparent” if it was single phase and “precipitate” if it was double phase

The results are shown in the following Table 1.

**Table 1**

Solubilizer	Dead Sea Salt Concentration [%w/w]				
	0	10	20	30	Sat.
1.0% w/w SDS (anionic)	Transparent	Precipitate	Precipitate	Precipitate	Precipitate
3.0% w/w SDS (anionic)	Transparent	Precipitate	Precipitate	Precipitate	Precipitate
1.0% w/w Cetri Chloride (cationic)	Transparent	Precipitate	Precipitate	Precipitate	Precipitate
5.0% w/w Cetri Chloride (cationic)	Transparent	Precipitate	Precipitate	Precipitate	Precipitate
1.0% w/w Tween 20 (non-ionic)	Transparent	Transparent	Transparent	Transparent	Transparent
5.0% w/w Tween 20 (non-ionic)	Transparent	Transparent	Transparent	Transparent	Transparent
1.0% w/w Tween 80 (non-ionic)	Transparent	Transparent	Transparent	Transparent	Transparent
5.0% w/w Tween 80 (non-ionic)	Transparent	Transparent	Transparent	Transparent	Transparent

6. As can be seen, both the anionic and the cationic surfactant caused salting out at rather low concentrations of Dead Sea water, while the transparency was maintained for the non-ionic solubilizer Tween 20 and Tween 80.

**Transparency of a composition comprising non-ionic surfactant, vitamin E acetate and Dead Sea water.**

7. The two non-ionic solubilizers, (Tween 20 and Tween 80) were mixed with varying concentrations of the hydrophobic Vitamin E acetate, and varying concentrations of Dead Sea salt solutions and the results were expressed in units of NTU (Standard turbidity units, measured by a turbidimeter), wherein a transparent composition was considered a composition having a NTU bellow 100. The results are shown in Table 2 below.

Table 2

Solubilizer	Dead Sea Salt Concentration [%w/w]				
	0	10	20	30	Sat.
5.0% w/w Tween 20 + 0.4% w/w Vit. E-Ac.	9	7	10	16	16
5.0% w/w Tween 20 + 0.6% w/w Vit. E-Ac.	46	45	60	77	130
5.0% w/w Tween 20 + 0.8% w/w Vit. E-Ac.	62	141	150	165	160
5.0% w/w Tween 80 + 0.4% w/w Vit. E-Ac.	38	40	62	77	84
5.0% w/w Tween 80 + 0.6% w/w Vit. E-Ac.	40	82	80	89	91
5.0% w/w Tween 80 + 0.8% w/w Vit. E-Ac.	46	90	90	95	105

8. The results show that in nearly all but saturated solutions of Dead Sea salts (in natural Dead Sea water the concentration is of course less than saturated) resulted in a transparent composition.

9. The results show in addition that the solubilizer Tween 80 having the longer chain is better capable of maintaining a transparent composition even with high Vitamin E acetate concentrations 0.8%.

10. These results show that maintaining a clear composition when using Dead Sea water, and in particular with the hydrophobic agent, was possible by using a non-ionic solubilizer and not when using a cationic or anionic solubilizer.

11. I hereby declare that all statements made herein of my own knowledge and are based on the Master's thesis of Y. Shaul, are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that willful false statements may jeopardize the validity of the Application, any patent issuing thereof, or any patent to which this verified statement is directed.

Shlomo Magdassi

Executed this 17 day of November, 2003.

# Annex A

## Short Curriculum Vitae

January 2002

### PROF. SHLOMO MAGDASSI

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The Hebrew University of Jerusalem  
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### ACADEMIC POSITIONS

**1998- present** , Associate Professor of Applied Chemistry at the Casali Institute of Applied Chemistry, The Hebrew University of Jerusalem.

2001-2002, Chairman of studies in Applied Chemistry

**1991-1997** , Senior Lecturer of Applied Chemistry at the Casali Institute of Applied Chemistry, The Hebrew University of Jerusalem.

**1986-1991** , Lecturer of Applied Chemistry at the Casali Institute of Applied Chemistry, The Hebrew University of Jerusalem.

**1986** Visiting assistant professor, winter quarter, College of Chemical Engineering, Ohio State University, U.S.A.

## **DESCRIPTION OF RESEARCH ACTIVITIES**

Investigation of physicochemical properties of novel colloidal systems, such as organic nanoparticles and microcapsules, and applications of new colloids in various industrial products are the main objectives of the research group. Current research topics include:

Formation and application of colloidal system possessing biological activity ( Surface activity of proteins) and possible use of naturally-occurring molecules designed to form new immunodiagnostic kits , Formation of new ink jet inks based on microemulsions and metal nanoparticles, formation of nanocapsules and nanoparticles, formation of nanoemulsions for ink's uv protection.

In addition, the research group deals with Formulation Chemistry, which is basically the formation of stable multicomponent, dispersed systems such as nanoparticles, emulsions, dispersions and microcapsules, with the aid of surfactants.

Formulation skills are applied to the development of various industrial products, among them cosmetic formulations, inks and paints, pharmaceutical dispersions, household products and agricultural delivery systems.

### **Research interests:**

1. Surface activity of proteins.
2. Microencapsulation.
3. Novel Nanoparticles
- 4 Emulsion and dispersion technology.
5. Flocculation mechanisms and processes.
6. Colloidal systems and surface active agents.
7. Adsorption at solid-liquid and fluid-fluid interfaces.
8. Diagnostics.
9. Drug targetting and delivery.
10. Inks, printing and coatings.

## **PUBLICATIONS**

About 80 papers, and 2 books edited. (below find a partial list)  
About 20 patents/patent applications.

## ACADEMIC ACTIVITIES

**2000-2003** , Advisory Board of Journal of Colloid and Interface Science

**1998** Chairman, 15th European Chemistry at Interfaces Conference, Israel.

**1996** Advisory Committee, 11th International Symposium on Surfactants in Solution, Israel.

Member of the Standing Committee for the European Chemistry at Interfaces Conference (ECIC).

**1996** International Advisory Board of the 9th International Conference on Surface and Colloid Science, Bulgaria, 1997.

**1989-1992** Chairman of studies in Applied Chemistry.

**1989-1992** Chairman of studies in Management of Technology.

**1988** Scientific secretary of the 4th National Conference: Chemistry, Technology and Applications of Surface Active Agents. Hod Hotel, the Dead Sea, Israel.